

CLAIMS

1. A process for preparing a polyethylene resin composition having a multimodal molecular weight distribution that comprises the steps of:

(a) providing from 10 to 90 wt% of a first metallocene-produced linear low density polyethylene (mLLDPE) resin having a density of from 0.920 to 0.940 g/cm³ and a melt index MI2 of from 0.1 to 10 dg/min;

(b) providing from 90 to 10 wt% of a second bi- or multi-modal polyethylene resin prepared either with a Ziegler-Natta or with a metallocene catalyst system, said polyethylene having a density ranging from 0.940 to 0.970 g/cm³ and a melt index MI2 of from 0.05 to 10 dg/min;

(c) physically blending together the first and second polyethylenes to form a polyethylene resin having a multimodal molecular weight distribution, a density ranging from 0.935 to 0.960 g/cm³ and a MI2 of from 0.2 to 0.9 dg/min.

2. The process according to claim 1 wherein the first mLLDPE has a density of not more than 0.935 g/cm³.

3. The process of claim 1 wherein the first mLLDPE has a melt flow index MI of from 0.5 to 5 dg/min

4. The process according to claim 1 wherein the second polyethylene resin has a bimodal molecular weight distribution.

5. The process according to claim 4 wherein the second polyethylene resin is produced with a Ziegler-Natta catalyst system.

6. The process according to claim 1 wherein the amount of the first mLLDPE is of from 25 to 75 wt% and the amount of the second polyethylene resin is of from 25 to 75 wt%.

7. The process according to claim 6 wherein the amount of each polyethylene component in the blend is of about 50 wt.%.

8. The process according to claim 1 wherein the metallocene catalyst component used to prepare the mLLDPE is ethylene bis(4,5,6,7-tetrahydro-1-indenyl) zirconium dichloride.

9. Use of the polyethylene composition prepared according to claim 1 in blow molding, injection molding, injection blow molding or tube extrusion applications.

10. Use of the polyethylene resin prepared according to claim 1 for preparing articles having a good balance of ESCR, rigidity, contact transparency and gloss.

11. Use of the polyethylene resin prepared according to claim 1 for the high speed production of bottles.

12. Cosmetic or household packaging produced with the polyethylene composition prepared according to claim 1.